



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water Ste. #300
Wichita, KS 67202

ATTN: Robert Hendrix

Hanway #1-12

12-15s-19w Ellis,KS

Start Date: 2013.02.25 @ 03:52:30

End Date: 2013.02.25 @ 11:28:00

Job Ticket #: 51679 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.07 @ 11:26:11



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water Ste. #300
Wichita, KS 67202
ATTN: Robert Hendrix

12-15s-19w Ellis, KS
Hanway #1-12
Job Ticket: 51679 **DST#: 1**
Test Start: 2013.02.25 @ 03:52:30

GENERAL INFORMATION:

Formation: **Lansing "D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 06:28:30
Time Test Ended: 11:28:00
Interval: **3373.00 ft (KB) To 3398.00 ft (KB) (TVD)**
Total Depth: 3398.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 66
Reference Elevations: 2050.00 ft (KB)
2036.00 ft (CF)
KB to GR/CF: 14.00 ft

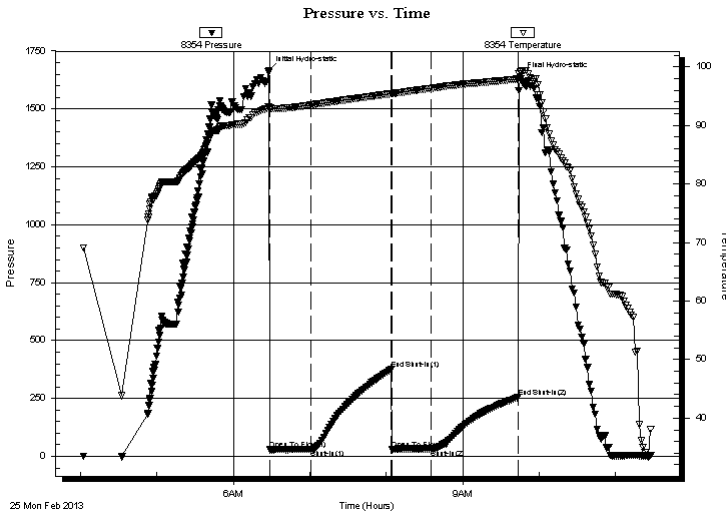
Serial #: 8354

Inside

Press @ Run Depth: 32.88 psig @ 3375.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.02.25 End Date: 2013.02.25 Last Calib.: 2013.02.25
Start Time: 04:02:30 End Time: 11:28:00 Time On Btm: 2013.02.25 @ 06:28:00
Time Off Btm: 2013.02.25 @ 09:45:00

TEST COMMENT: IF-Very weak blow . Built to 3/4 inch. Died off to surface.
ISI-No Return.
FF-Weak surface blow . Died @ 2 minutes.
FSI-No Return.

PRESSURE SUMMARY



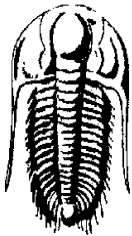
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1666.28	93.18	Initial Hydro-static
1	29.69	92.74	Open To Flow (1)
33	32.02	93.47	Shut-In(1)
96	375.12	95.41	End Shut-In(1)
97	31.90	95.39	Open To Flow (2)
127	32.88	96.35	Shut-In(2)
196	254.79	97.93	End Shut-In(2)
197	1638.53	99.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	100%Mud	0.15

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water Ste. #300
 Wichita, KS 67202
 ATTN: Robert Hendrix

12-15s-19w Ellis,KS
Hanway #1-12
 Job Ticket: 51679 **DST#: 1**
 Test Start: 2013.02.25 @ 03:52:30

GENERAL INFORMATION:

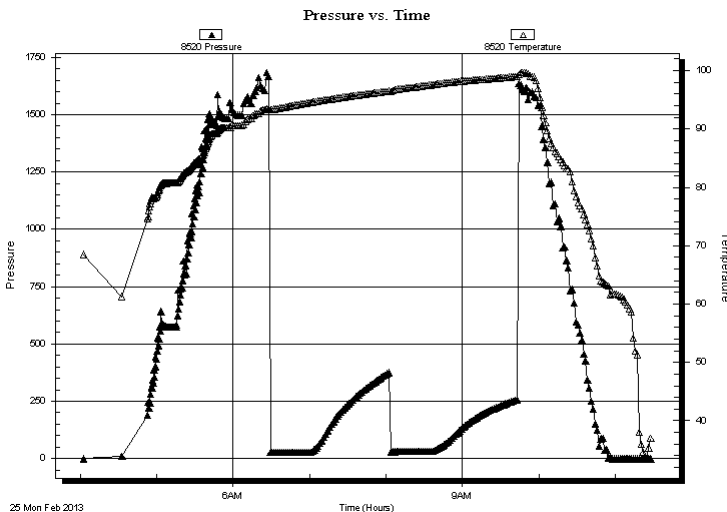
Formation: Lansing "D"		
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 06:28:30		Tester: Dustin Rash
Time Test Ended: 11:28:00		Unit No: 66
Interval: 3373.00 ft (KB) To 3398.00 ft (KB) (TVD)		Reference Elevations: 2050.00 ft (KB)
Total Depth: 3398.00 ft (KB) (TVD)		2036.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 14.00 ft

Serial #: 8520 Outside

Press @ RunDepth:	psig @ 3375.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2013.02.25 End Date:	2013.02.25	Last Calib.: 2013.02.25
Start Time:	04:02:45 End Time:	11:27:45	Time On Btm:
			Time Off Btm:

TEST COMMENT: IF-Very weak blow . Built to 3/4 inch. Died off to surface.
 IS-No Return.
 FF-Weak surface blow . Died @ 2 minutes.
 FS-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
30.00	100%Mud	0.15

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

12-15s-19w Ellis,KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51679

DST#: 1

ATTN: Robert Hendrix

Test Start: 2013.02.25 @ 03:52:30

Tool Information

Drill Pipe:	Length: 3188.00 ft	Diameter: 3.80 inches	Volume: 44.72 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 45.60 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3373.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	48.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3351.00	
Shut In Tool	5.00			3356.00	
Hydraulic tool	5.00			3361.00	
Safety Joint	3.00			3364.00	
Packer	5.00			3369.00	23.00 Bottom Of Top Packer
Packer	4.00			3373.00	
Stubb	1.00			3374.00	
Perforations	1.00			3375.00	
Recorder	0.00	8354	Inside	3375.00	
Recorder	0.00	8520	Outside	3375.00	
Perforations	20.00			3395.00	
Bullnose	3.00			3398.00	25.00 Bottom Packers & Anchor

Total Tool Length: 48.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-15s-19w Ellis,KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51679

DST#: 1

ATTN: Robert Hendrix

Test Start: 2013.02.25 @ 03:52:30

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	100%Mud	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8354

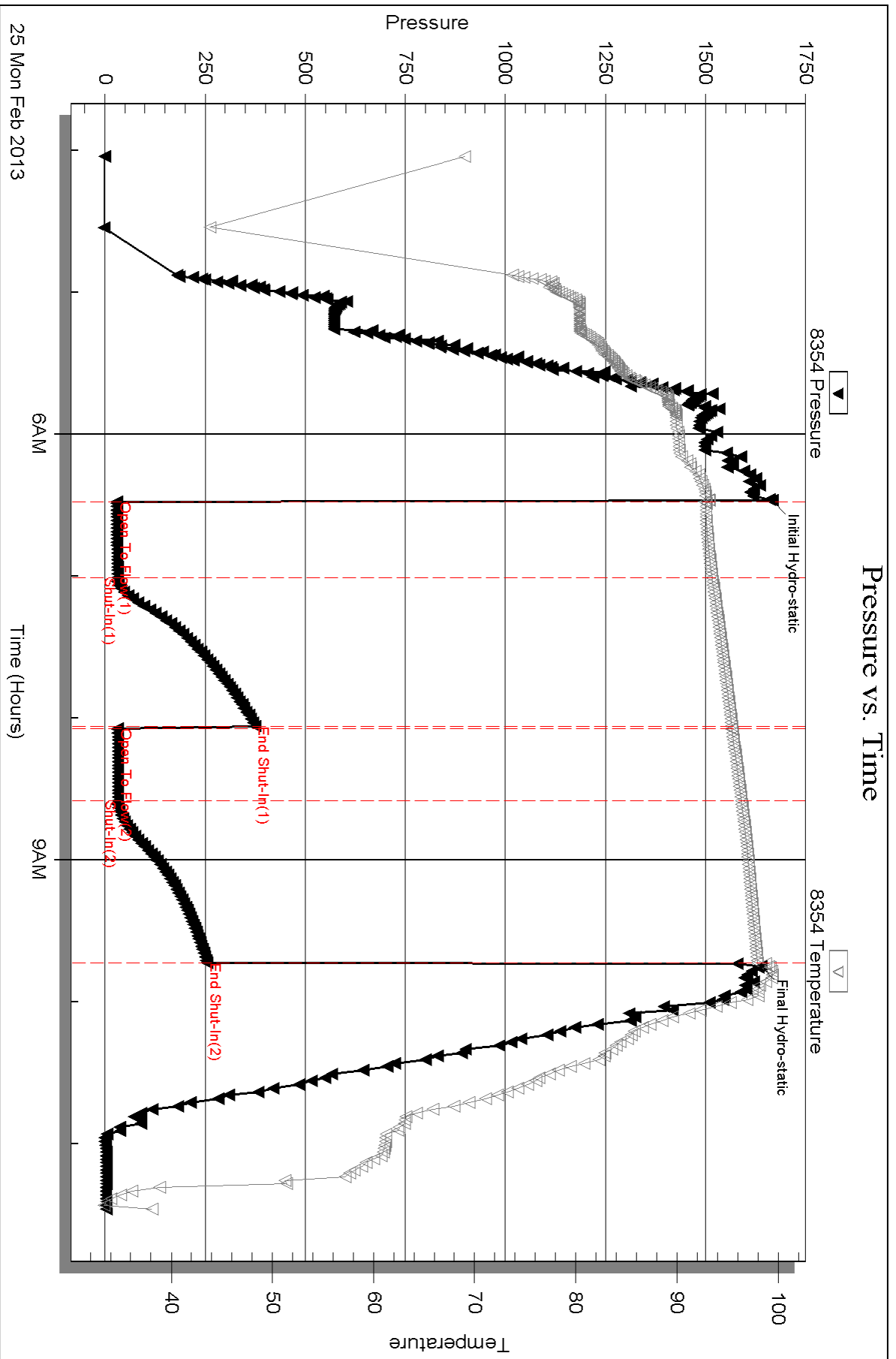
Inside

Murfin Drilling Co., Inc.

Harway #1-12

DST Test Number: 1

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 51679

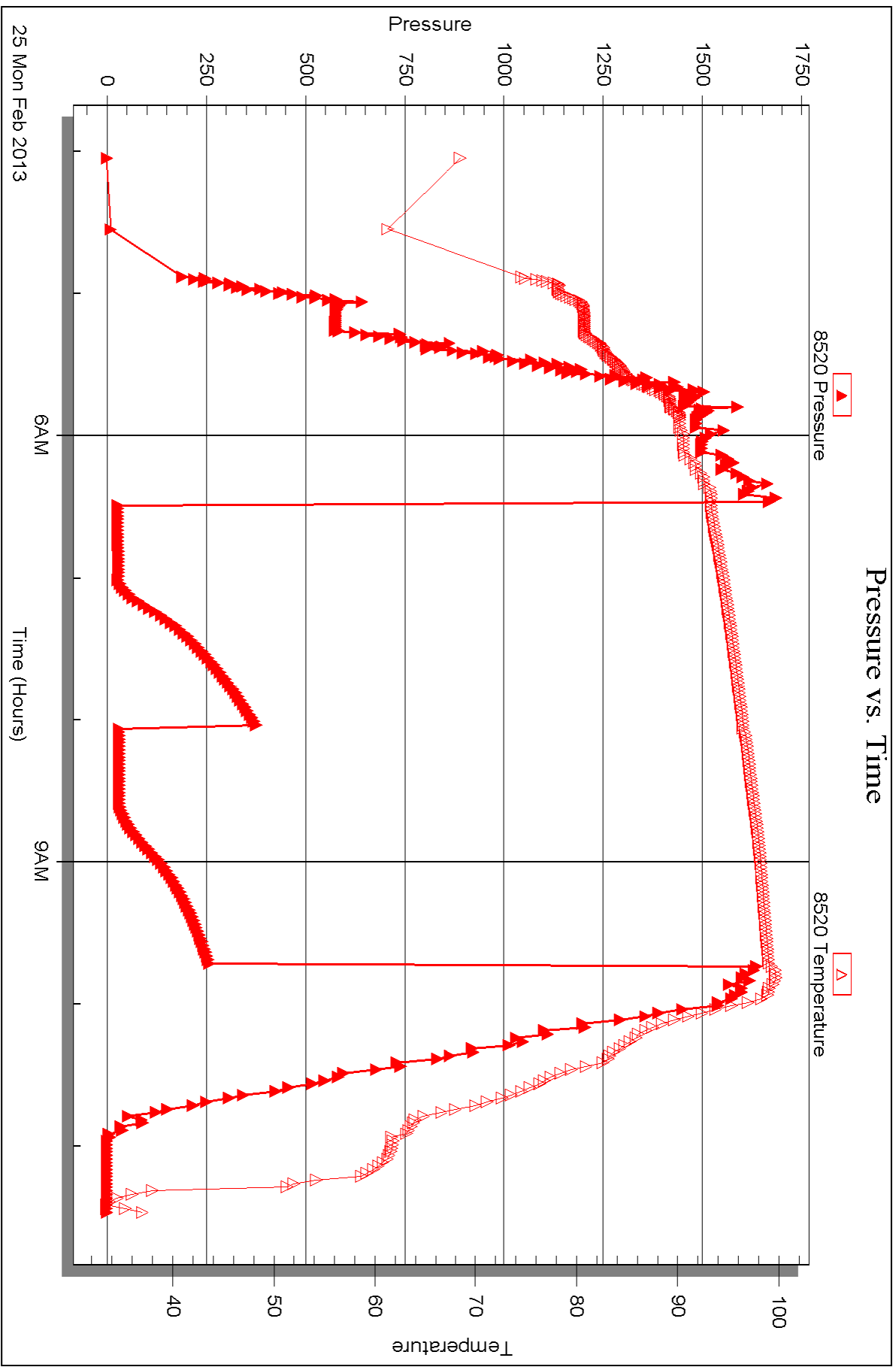
Printed: 2013.03.07 @ 11:26:13

Serial #: 8520

Outside Murfin Drilling Co., Inc.

Harway #1-12

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 51679

Printed: 2013.03.07 @ 11:26:14



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water Ste. #300
Wichita, KS 67202

ATTN: Robert Hendrix

Hanway #1-12

12-15s-19w Ellis,KS

Start Date: 2013.02.26 @ 03:40:30

End Date: 2013.02.26 @ 11:49:30

Job Ticket #: 51680 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.07 @ 11:25:30



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water Ste. #300
Wichita, KS 67202
ATTN: Robert Hendrix

12-15s-19w Ellis,KS
Hanway #1-12
Job Ticket: 51680 **DST#: 2**
Test Start: 2013.02.26 @ 03:40:30

GENERAL INFORMATION:

Formation: **Lansing "H,I,&J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 05:20:00
 Time Test Ended: 11:49:30
 Interval: **3464.00 ft (KB) To 3530.00 ft (KB) (TVD)**
 Total Depth: 3530.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Dustin Rash
 Unit No: 66
 Reference Elevations: 2050.00 ft (KB)
 2036.00 ft (CF)
 KB to GR/CF: 14.00 ft

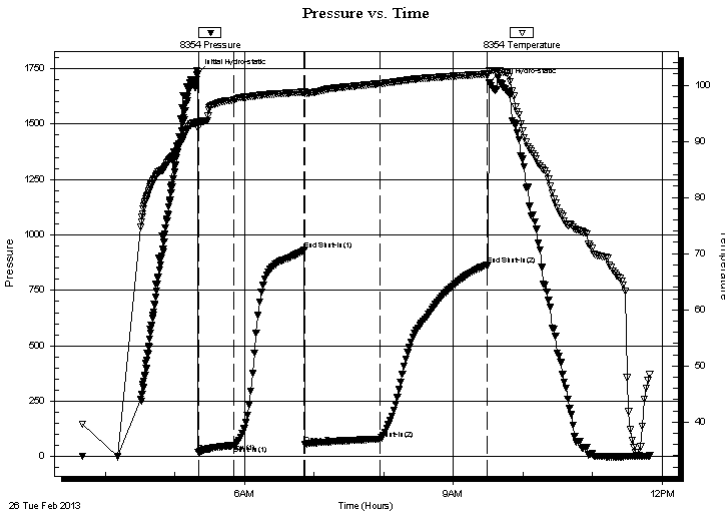
Serial #: 8354

Inside

Press @ Run Depth: 79.87 psig @ 3504.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.02.26 End Date: 2013.02.26 Last Calib.: 2013.02.26
 Start Time: 03:40:30 End Time: 11:49:30 Time On Btm: 2013.02.26 @ 05:19:50
 Time Off Btm: 2013.02.26 @ 09:31:00

TEST COMMENT: IF-Weak building blow . BOB @ 24 minutes 30 seconds.
 ISI-Weak surface return for 7 minutes.
 FF-Weak building blow . BOB @ 21 minutes 30 seconds.
 FSI-Return @ 1 minute. Built to 3 inches.

PRESSURE SUMMARY



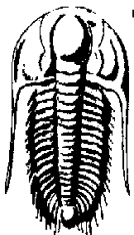
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1727.01	93.54	Initial Hydro-static
1	18.77	92.48	Open To Flow (1)
32	50.92	97.34	Shut-In(1)
92	931.25	98.78	End Shut-In(1)
93	57.09	98.58	Open To Flow (2)
157	79.87	100.26	Shut-In(2)
250	865.69	101.98	End Shut-In(2)
252	1687.18	102.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	20%Gas/30%Oil/50%Mud	0.30
60.00	20%Gas/60%Oil/20%Mud	0.30
30.00	20%Gas/80%Oil	0.15
0.00	156' G.I.P.	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

12-15s-19w Ellis, KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51680

DST#: 2

ATTN: Robert Hendrix

Test Start: 2013.02.26 @ 03:40:30

GENERAL INFORMATION:

Formation: **Lansing "H,I,&J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:20:00

Time Test Ended: 11:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 66

Interval: **3464.00 ft (KB) To 3530.00 ft (KB) (TVD)**

Total Depth: 3530.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2050.00 ft (KB)

2036.00 ft (CF)

KB to GR/CF: 14.00 ft

Serial #: 8520 Outside

Press @ RunDepth: psig @ 3504.00 ft (KB)

Start Date: 2013.02.26

End Date: 2013.02.26

Start Time: 03:40:45

End Time: 11:48:45

Capacity: 8000.00 psig

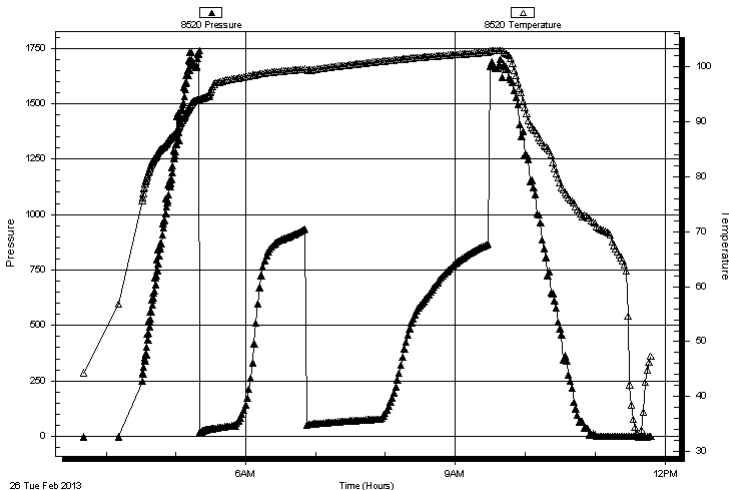
Last Calib.: 2013.02.26

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-Weak building blow . BOB @ 24 minutes 30 seconds.
ISI-Weak surface return for 7 minutes.
FF-Weak building blow . BOB @ 21 minutes 30 seconds.
FSI-Return @ 1 minute. Built to 3 inches.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
60.00	20%Gas/30%Oil/50%Mud	0.30
60.00	20%Gas/60%Oil/20%Mud	0.30
30.00	20%Gas/80%Oil	0.15
0.00	156' G.I.P.	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

12-15s-19w Ellis,KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51680

DST#: 2

ATTN: Robert Hendrix

Test Start: 2013.02.26 @ 03:40:30

Tool Information

Drill Pipe:	Length: 3281.00 ft	Diameter: 3.80 inches	Volume: 46.02 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 46.90 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3464.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	89.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3442.00	
Shut In Tool	5.00			3447.00	
Hydraulic tool	5.00			3452.00	
Safety Joint	3.00			3455.00	
Packer	5.00			3460.00	23.00 Bottom Of Top Packer
Packer	4.00			3464.00	
Stubb	1.00			3465.00	
Perforations	5.00			3470.00	
Change Over Sub	1.00			3471.00	
Drill Pipe	32.00			3503.00	
Change Over Sub	1.00			3504.00	
Recorder	0.00	8354	Inside	3504.00	
Recorder	0.00	8520	Outside	3504.00	
Perforations	23.00			3527.00	
Bullnose	3.00			3530.00	66.00 Bottom Packers & Anchor

Total Tool Length: 89.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-15s-19w Ellis,KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51680

DST#: 2

ATTN: Robert Hendrix

Test Start: 2013.02.26 @ 03:40:30

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 59.00 sec/qt
Water Loss: 5.99 in³
Resistivity: ohm.m
Salinity: 6200.00 ppm
Filter Cake: inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 32 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	20%Gas/30%Oil/50%Mud	0.295
60.00	20%Gas/60%Oil/20%Mud	0.295
30.00	20%Gas/80%Oil	0.148
0.00	156' G.I.P.	0.000

Total Length: 150.00 ft Total Volume: 0.738 bbl

Num Fluid Samples: 0

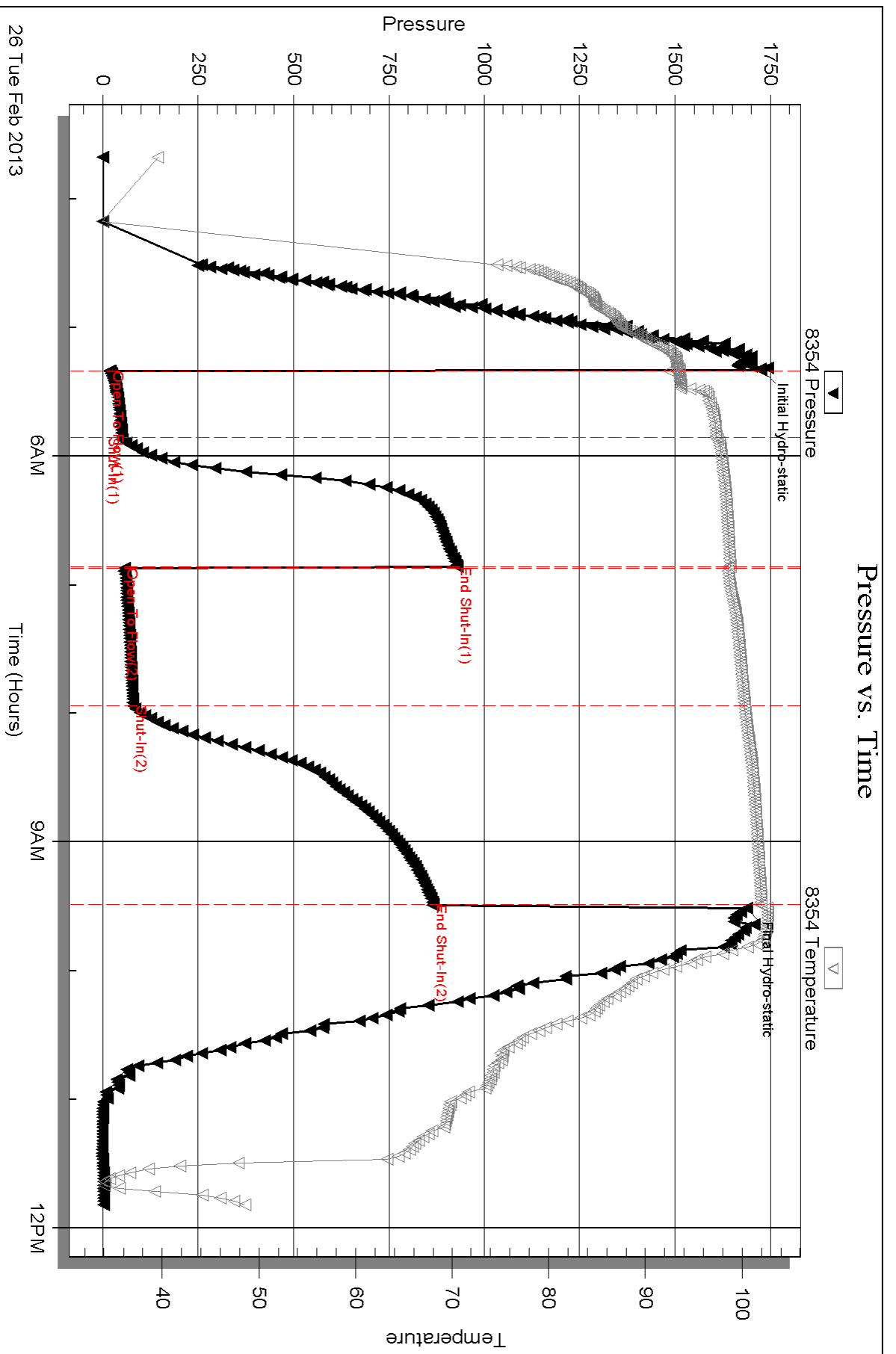
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

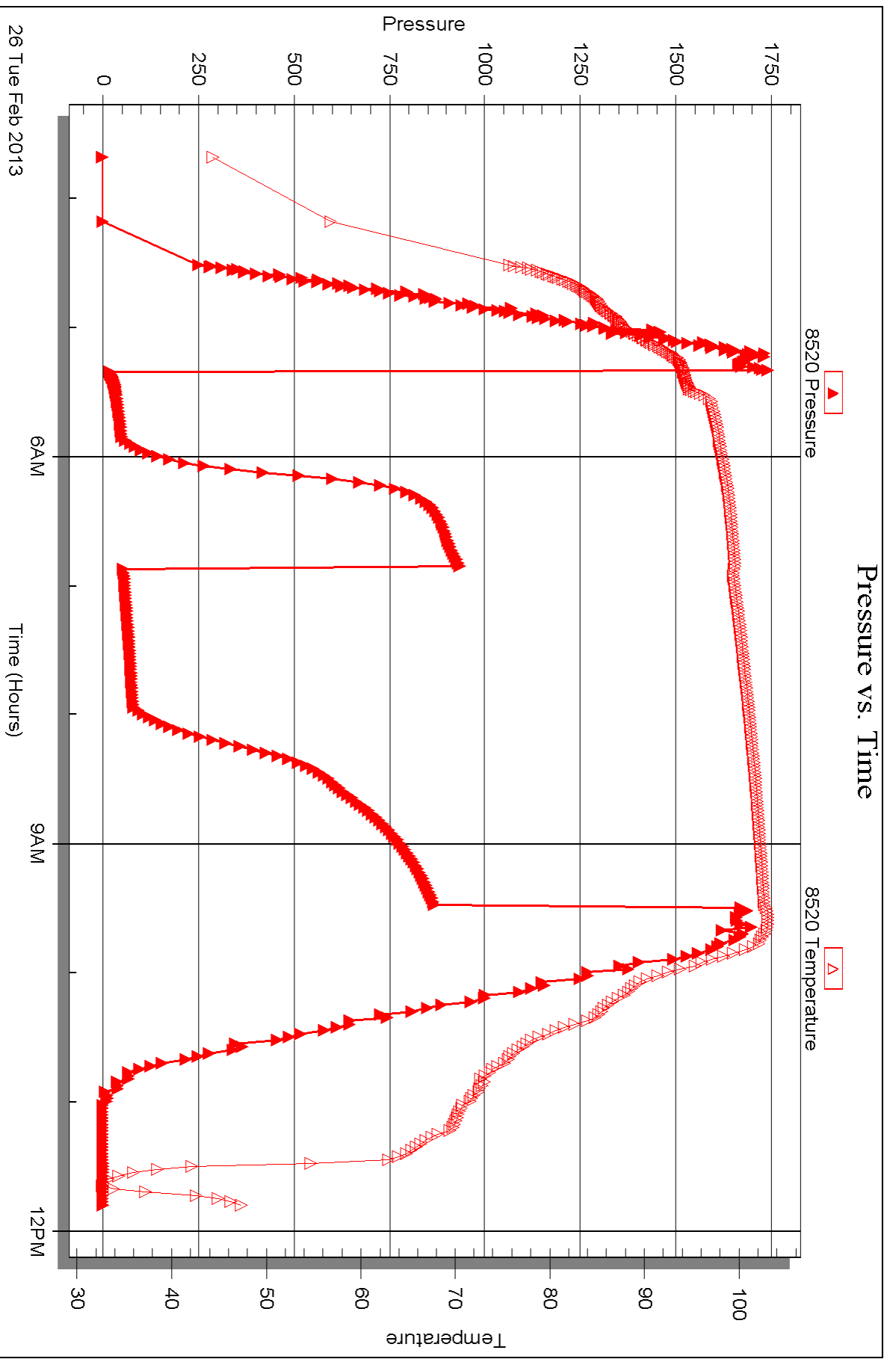


Serial #: 8520

Outside Murfin Drilling Co., Inc.

Harway #1-12

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water Ste. #300
Wichita, KS 67202

ATTN: Robert Hendrix

Hanway #1-12

12-15s-19w Ellis,KS

Start Date: 2013.02.27 @ 04:42:30

End Date: 2013.02.27 @ 12:04:30

Job Ticket #: 51681 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.07 @ 11:24:54



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water Ste. #300
Wichita, KS 67202
ATTN: Robert Hendrix

12-15s-19w Ellis, KS
Hanway #1-12
Job Ticket: 51681 **DST#: 3**
Test Start: 2013.02.27 @ 04:42:30

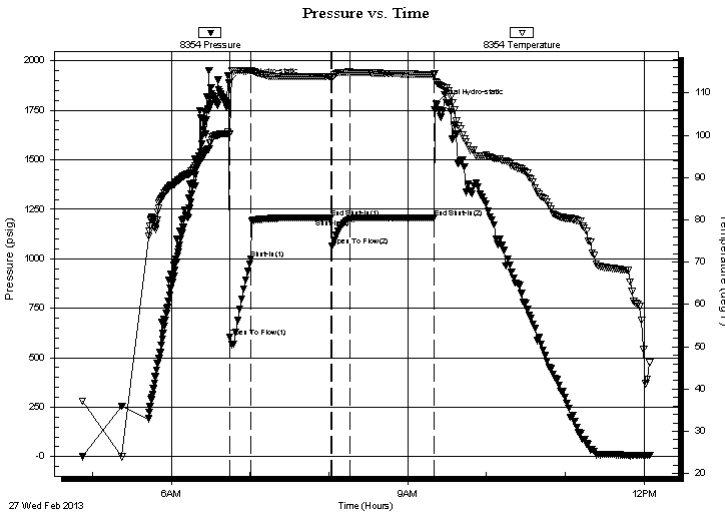
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 06:44:30
Time Test Ended: 12:04:30
Interval: **3660.00 ft (KB) To 3670.00 ft (KB) (TVD)**
Total Depth: 3670.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Dustin Rash
Unit No: 66
Reference Elevations: 2050.00 ft (KB)
2036.00 ft (CF)
KB to GR/CF: 14.00 ft

Serial #: 8354 Inside
Press @ Run Depth: 1200.73 psig @ 3662.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.02.27 End Date: 2013.02.27 Last Calib.: 2013.02.27
Start Time: 04:52:30 End Time: 12:04:30 Time On Btm: 2013.02.27 @ 06:44:00
Time Off Btm: 2013.02.27 @ 09:21:30

TEST COMMENT: IF-Very strong blow . BOB @ 30 seconds.
ISI-No Return.
FF-Very strong blow . BOB @ 30 seconds.
FSI-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1889.88	100.19	Initial Hydro-static
1	604.52	100.39	Open To Flow (1)
17	999.53	115.25	Shut-In(1)
78	1208.40	113.90	End Shut-In(1)
79	1065.14	113.65	Open To Flow (2)
92	1200.73	114.93	Shut-In(2)
156	1208.42	114.36	End Shut-In(2)
158	1784.43	112.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2131.00	95%Water/5%Mud	28.27
378.00	90%Water/10%Mud	5.30
141.00	40%Water/60%Mud	1.98

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

12-15s-19w Ellis, KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

ATTN: Robert Hendrix

Job Ticket: 51681

DST#: 3

Test Start: 2013.02.27 @ 04:42:30

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:44:30

Time Test Ended: 12:04:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Dustin Rash

Unit No: 66

Interval: 3660.00 ft (KB) To 3670.00 ft (KB) (TVD)

Reference Elevations: 2050.00 ft (KB)

Total Depth: 3670.00 ft (KB) (TVD)

2036.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 14.00 ft

Serial #: 8520 Outside

Press @ RunDepth: psig @ 3662.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.02.27

End Date:

2013.02.27

Last Calib.:

2013.02.27

Start Time:

04:52:45

End Time:

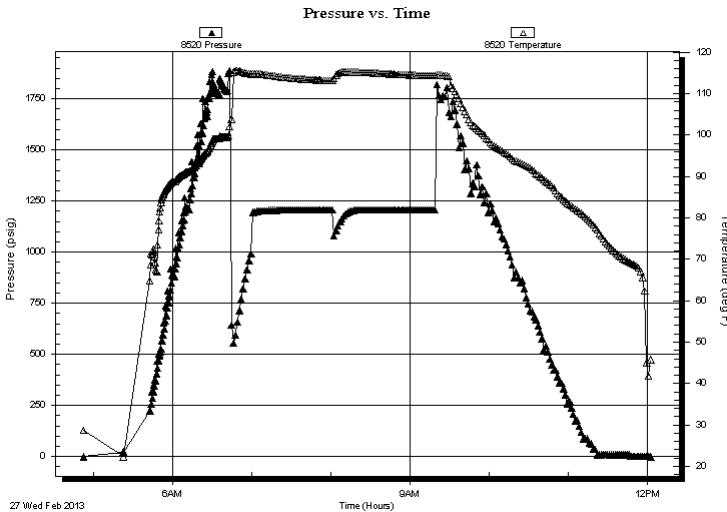
12:03:45

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-Very strong blow . BOB @ 30 seconds.
IS- No Return.
FF-Very strong blow . BOB @ 30 seconds.
FS- No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
2131.00	95%Water/5%Mud	28.27
378.00	90%Water/10%Mud	5.30
141.00	40%Water/60%Mud	1.98

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

12-15s-19w Ellis,KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51681

DST#: 3

ATTN: Robert Hendrix

Test Start: 2013.02.27 @ 04:42:30

Tool Information

Drill Pipe:	Length: 3467.00 ft	Diameter: 3.80 inches	Volume: 48.63 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 49.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3660.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	38.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3633.00	
Shut In Tool	5.00			3638.00	
Hydraulic tool	5.00			3643.00	
Jars	5.00			3648.00	
Safety Joint	3.00			3651.00	
Packer	5.00			3656.00	28.00 Bottom Of Top Packer
Packer	4.00			3660.00	
Stubb	1.00			3661.00	
Perforations	1.00			3662.00	
Recorder	0.00	8354	Inside	3662.00	
Recorder	0.00	8520	Outside	3662.00	
Perforations	5.00			3667.00	
Bullnose	3.00			3670.00	10.00 Bottom Packers & Anchor

Total Tool Length: 38.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

12-15s-19w Ellis,KS

250 N. Water Ste. #300
Wichita, KS 67202

Hanway #1-12

Job Ticket: 51681

DST#: 3

ATTN: Robert Hendrix

Test Start: 2013.02.27 @ 04:42:30

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

9000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: 1.18 ohm.m

Gas Cushion Pressure:

psig

Salinity: 7800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
2131.00	95%Water/5%Mud	28.271
378.00	90%Water/10%Mud	5.302
141.00	40%Water/60%Mud	1.978

Total Length: 2650.00 ft Total Volume: 35.551 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

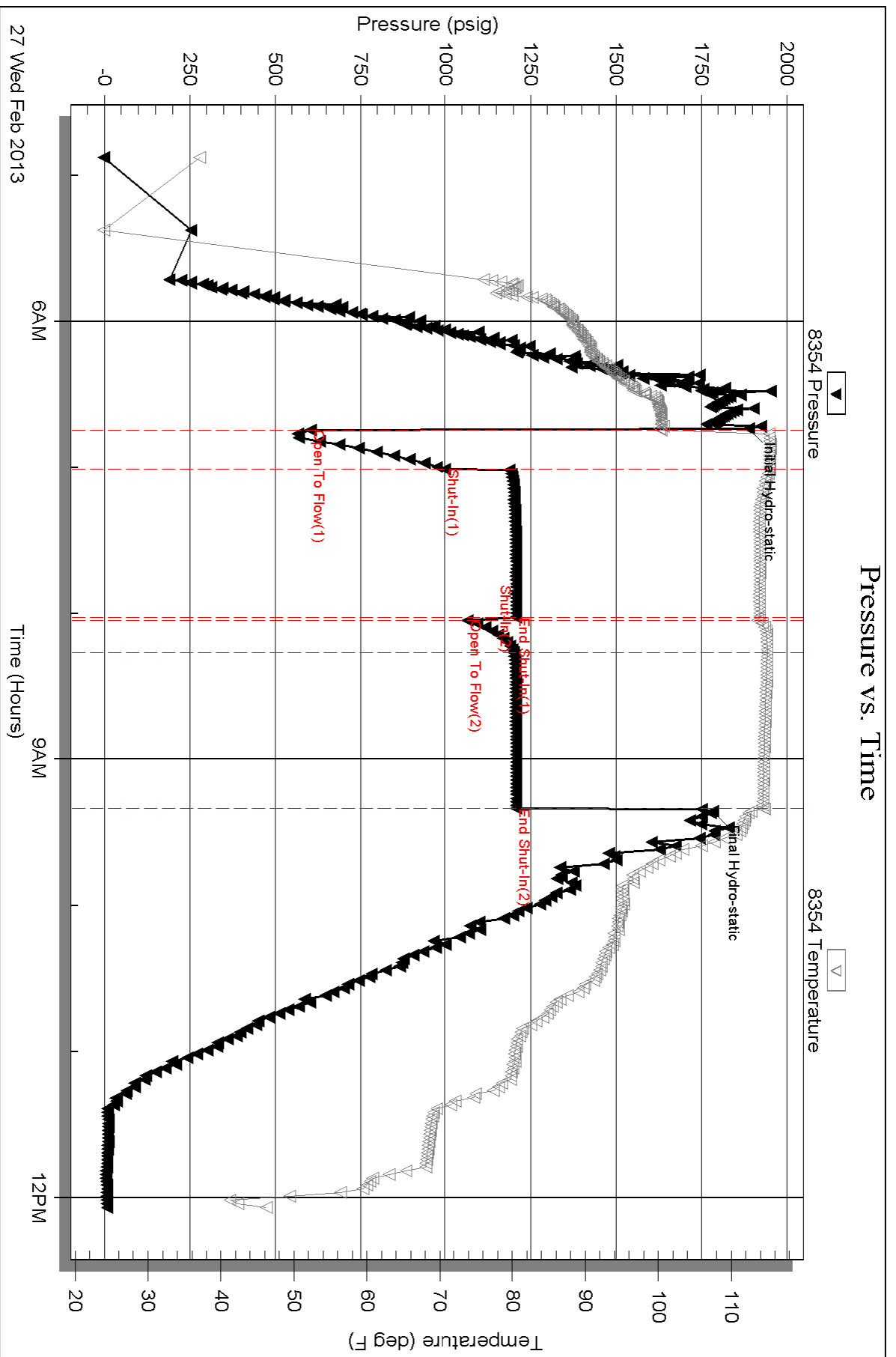
Serial #: 8354

Inside

Murfin Drilling Co., Inc.

Hanway #1-12

DST Test Number: 3

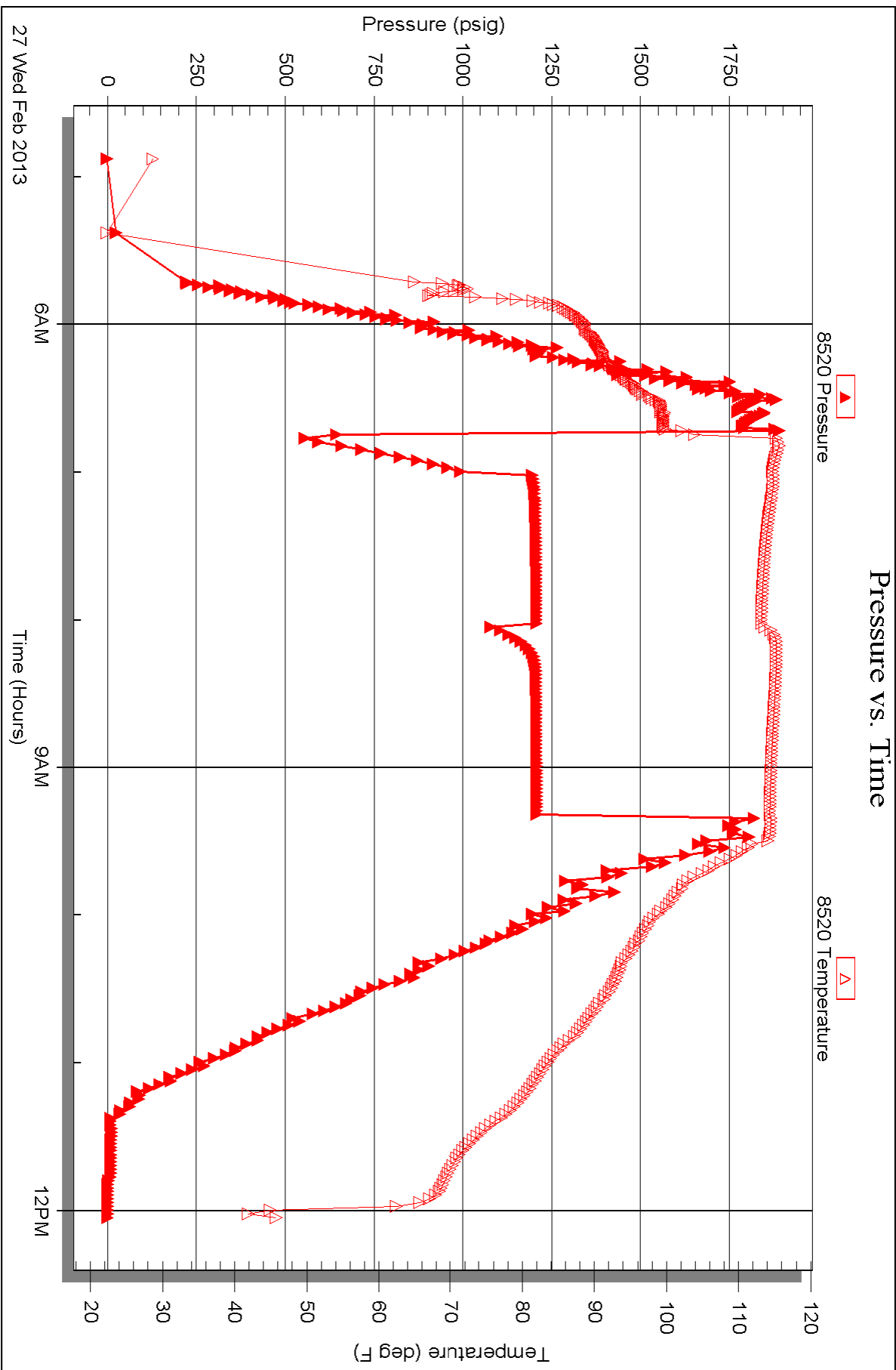


Serial #: 8520

Outside Murfin Drilling Co., Inc.

Harway #1-12

DST Test Number: 3





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51679

Well Name & No. Harway # 1-R Test No. 1 Date 2-25-13
 Company Murphy Drilling Co., Inc. Elevation 2050 KB 2036 GL
 Address 250 N. Water St. #300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murphy #2
 Location: Sec. 12 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3373-3398 Zone Tested Lansing "D"
 Anchor Length 25' Drill Pipe Run 3188 Mud Wt. 8.6
 Top Packer Depth 3368 Drill Collars Run 177.78 Vis 58
 Bottom Packer Depth 3373 Wt. Pipe Run 0 WL 6.0
 Total Depth 3398 Chlorides 4800 ppm System LCM 1#

Blow Description IF - Very weak blow. Burt to 3/4 inch. Died off to surface.
FST - No Return.
FF - Weak surface blow. Died @ 2 minutes.
FST - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
30	Mud			100	

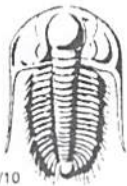
Rec Total 30 BHT 99 Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 1666 Test 1150 T-On Location 0215
 (B) First Initial Flow 30 Jars T-Started 0430
 (C) First Final Flow 32 Safety Joint 75 T-Open 0628
 (D) Initial Shut-In 375 Circ Sub T-Pulled 0940
 (E) Second Initial Flow 32 Hourly Standby T-Out 1130
 (F) Second Final Flow 33 Mileage 16x2 49.60 Comments BHT-0352
 (G) Final Shut-In 255 Sampler
 (H) Final Hydrostatic 1639 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer

Initial Open 30 Extra Packer Extra Copies
 Initial Shut-In 60 Extra Recorder Sub Total 0
 Final Flow 30 Day Standby Total 1274.60
 Final Shut-In 60 Accessibility MP/DST Disc't
 Sub Total 1274.60

Approved By Our Representative *[Signature]*

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51680

Well Name & No. Harway # 1-12 Test No. 2 Date 2-26-13
 Company Murphy Drilling Co., Inc. Elevation 2050 KB 2036 GL
 Address 250 N. Water St. #300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murphy #2
 Location: Sec. 12 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3464-3530 Zone Tested Lansing "H-I-J"
 Anchor Length 66' Drill Pipe Run 3281' Mud Wt. 8.9
 Top Packer Depth 3459 Drill Collars Run 177.78 Vis 59
 Bottom Packer Depth 3464 Wt. Pipe Run 0 WL 6.0
 Total Depth 3530 Chlorides 6200 ppm System LCM 2#

Blow Description IF- Weak building blow. BOB @ 24 minutes 30 seconds.
IST- Weak surface return for 7 minutes.
FF- Weak building blow. BOB @ 21 minutes 30 seconds.
FST- Return @ 1 minute. Built to 3 inches.

Rec	Feet of	%gas	%oil	%water	%mud
30	Gassy Oil	20	80		
60	GMO	20	60		20
60	HOCGM	20	30		50
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of <u>156' 166 G.I.P.</u>	%gas	%oil	%water	%mud

Rec Total 150 BHT 103 Gravity 32 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1727 Test 1150 T-On Location 0300
 (B) First Initial Flow 19 Jars T-Started 0345
 (C) First Final Flow 57 Safety Joint 75 T-Open 0520
 (D) Initial Shut-In 931 Circ Sub T-Pulled 0925
 (E) Second Initial Flow 57 Hourly Standby T-Out 1145
 (F) Second Final Flow 80 Mileage 16X2 49.60 Comments BUTT-0330
 (G) Final Shut-In 866 Sampler _____
 (H) Final Hydrostatic 1687 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 0
 Final Flow 60 Day Standby _____ Total 1274.60
 Final Shut-In 90 Accessibility _____ MP/DST Disc't _____
 Sub Total 1274.60

Approved By _____ Our Representative D. Rash

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51681

Well Name & No. Harway #1-12 Test No. 3 Date 2-27-13
 Company Mulfin Drilling Co., Inc. Elevation 2050 KB 2036 GL
 Address 250 N. Water Ste. #300 Wichita, KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Mulfin #2
 Location: Sec. 12 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3660-3670 Zone Tested Arbuckle
 Anchor Length 10' Drill Pipe Run _____ Mud Wt. 9.0
 Top Packer Depth 3655 Drill Collars Run 177.78 Vis 57
 Bottom Packer Depth 3660 Wt. Pipe Run 0 WL 6.4
 Total Depth 3670 Chlorides 7800 ppm System LCM 2.0#

Blow Description IF - Very strong blow, BOB @ 30 seconds,
ISF - No Return,
FF - Very strong blow, BOB @ 30 seconds,
FSE - No Return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>141</u>	<u>Watery Mud</u>		<u>40</u>	<u>60</u>	
<u>378</u>	<u>Muddy water</u>		<u>90</u>	<u>10</u>	
<u>2131</u>	<u>Muddy water</u>		<u>95</u>	<u>5</u>	
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 2650 BHT 115 Gravity _____ API RW 1.18 @ 48 °F Chlorides 9000 ppm

(A) Initial Hydrostatic 1890 Test 1150 T-On Location 0415
 (B) First Initial Flow 605 Jars _____ T-Started 0500
 (C) First Final Flow 1000 Safety Joint 75 T-Open 0644
 (D) Initial Shut-In 1208 Circ Sub _____ T-Pulled 0920
 (E) Second Initial Flow 1065 Hourly Standby _____ T-Out 1200
 (F) Second Final Flow 1201 Mileage 16X2 49.60 Comments Bot-0442
 (G) Final Shut-In 1208 Sampler _____
 (H) Final Hydrostatic 1784 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 15 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 0
 Final Flow 15 Day Standby _____ Total 1274.60
 Final Shut-In 60 Accessibility _____ MP/DST Disc't _____
 Sub Total 1274.60

Approved By _____ Our Representative D. Rash

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